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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,075	09/28/2005	Terry P Bowen	17885 A	9531

26794 7590 10/13/2006

TYCO TECHNOLOGY RESOURCES
4550 NEW LINDEN HILL ROAD, SUITE 140
WILMINGTON, DE 19808-2952

EXAMINER

LUU, THANH X

ART UNIT PAPER NUMBER

2878

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/520,075

Applicant(s)

BOWEN ET AL.

Examiner

Thanh X. Luu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/23/06</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "4" and "12" have both been used to designate "the first optical component". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second optical component comprising a substrate, a second optical axis of the substrate; and all the method steps in preparing the first optical component for incorporation into an optical subassembly must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

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prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7-10 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 7, "said laser diode" and "monitor diode" lacks proper antecedent basis. It appears that Applicant intended for claim 7 to be dependent from

claim 6. Clarification is required. Furthermore, "are optically connector via a waveguide" does not make sense.

Regarding claims 8-10, "said substrate" lacks proper antecedent basis. It appears that Applicant intended for claim 8 to be dependent from claim 2. Clarification is required.

Regarding claim 20, "more the two parallel lines" does not make sense. Furthermore, "the two parallel lines" lacks proper antecedent basis. In addition, it is unclear what it means for a "center portion is a side portion relative to at least one of its side portions." That is, how can a center portion be a side portion? It is unclear what Applicant is trying to claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Heinen et al. (U.S. Patent 4,768,199).

Regarding claims 1-4, 11 and 13-15, Heinen et al. disclose (see Figs. 1-5) an optical assembly, comprising: a platform (111) defining a v-groove (113) with walls of a certain pitch; a first optical component (2) having a reference surface and two sides (8, 9), each side being beveled at the certain pitch outwardly from the reference surface, the first optical component having a first optical axis (at 7), the first optical component

being disposed in the v-groove such that the reference surface faces downward and the sides are in parallel contact with the walls of the v-groove; and a second optical component (21) having an outer periphery with at least two contact points and a second optical axis, the second optical component being disposed in the v-groove such that the contact points contact the walls of the v-groove and the second optical axis is coaxial with the first optical axis. The laser (7) is a semiconductor active element that defines the optical axis.

8. Claims 1-3, 11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto (U.S. Patent 5,849,204).

Regarding claims 1-3, 11 and 13-15, Matsumoto discloses (see Figs. 4) an optical assembly, comprising: a platform (12) defining a v-groove (16) with walls of a certain pitch; a first optical component (11) having a reference surface and two sides, each side being beveled at the certain pitch outwardly from the reference surface, the first optical component having a first optical axis, the first optical component being disposed in the v-groove such that the reference surface faces downward and the sides are in parallel contact with the walls of the v-groove; and a second optical component (7) having an outer periphery with at least two contact points and a second optical axis, the second optical component being disposed in the v-groove such that the contact points contact the walls of the v-groove and the second optical axis is coaxial with the first optical axis.

9. Claims 16, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Takemura (JP 2001-215370).

Regarding claims 16, 18 and 19, Takemura discloses (see Figs. 2 and 3) a method of preparing a first optical component (10) for incorporation into an optical subassembly, comprising: defining the location of at least two parallel v-grooves (12) in a wafer to define at least one center portion between the two v-grooves and a side portion on either side of the center portion; defining a fiducial location (at 11) for mounting an optical element on the center portion between the parallel v-grooves, the fiducial being a certain distance relative to the parallel v-grooves; etching the v-grooves; creating a fiducial at the fiducial location; securing an optical element (3a) to the center portion relative to the fiducial; and separating (at D) the side portions from the center portion. Takemura also discloses (see paragraph [0019]) etching.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 8-10, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Heinen et al. or Matsumoto.

Regarding claims 8-10, Heinen et al. and Matsumoto disclose the claimed invention as set forth above. Heinen et al. and Matsumoto do not specifically disclose the type of materials as claimed or the pitch. However, choosing the particular type of material and pitch is a matter of design choice and would require only routine skill in the art. It would have been obvious to one of ordinary skill in the art at the time the

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invention was made provide the same materials for each component in the apparatus of Heinen et al. or Matsumoto to simplify manufacturing.

12. Claims 5-7, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinen et al. in view of Fukuda et al. (U.S. Patent 6,931,215).

Regarding claims 5-7, Heinen et al. disclose the claimed invention as set forth above. Heinen et al. further discloses a laser diode. Heinen et al. do not specifically disclose a monitor diode as claimed. Fukuda et al. teach (see Fig. 1) a similar module having a laser diode (1) optically connected to a monitor diode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a monitor diode on the substrate as claimed in the apparatus of Heinen et al. in view of Fukuda et al. to provide feedback for intensity control and improve transmission as taught.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinen et al. in view of Sherrer (U.S. Patent 6,786,649).

Regarding claim 12, Heinen et al. disclose the claimed invention as set forth above. Heinen et al. do not specifically disclose the second optical component comprises a substrate having beveled sides as claimed. Sherrer teaches (see Figs.) a fiber waveguide having beveled sides. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a beveled waveguide substrate as claimed in the apparatus of Heinen et al. in view of Sherrer to obtain a better more stable fit.

14. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Takemura in view of Uekawa et al. (U.S. Patent 6,934,449).

Regarding claim 17, Takemura discloses the claimed invention as set forth above. Takemura does not specifically disclose a photolithography step as claimed. Uekawa et al. teach (see col. 5, lines 55-60) defining parts by a photolithography process. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a photolithography step as claimed in the method of Takemura in view of Uekawa et al. to efficiently and cost-effectively define such elements.

15. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura in view of Tabuchi (U.S. Patent 5,909,524).

Regarding claims 21 and 22, Takemura discloses the claimed invention as set forth above. Takemura does not specifically disclose solder pads as claimed. Tabuchi teaches (see Fig. 86) using solder pads (181) as claimed to obtain better bonding. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use solder pads as claimed in the method of Takemura in view of Tabuchi to obtain a more resilient device.

Conclusion

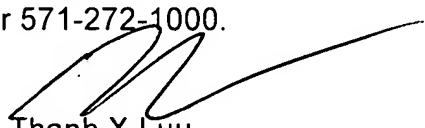
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for

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the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Thanh X Luu
Primary Examiner
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